

Application No. 10/711,194
Amendment Dated November 27, 2006
Reply to Office Action of June 1, 2006

REMARKS

In the Office Action of June 1, 2006, the Examiner correctly identified the applicant's election of claim 1-6, 8 and 9 in the application. By the present response, previously withdrawn claims 10-14 have been cancelled.

In the Office Action, claims 1-6, 8 and 9 were rejected under 35 USC §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that the applicant regards as the invention. By the present response, independent claim 1 has been cancelled and generally rewritten as new independent claim 15. Claim 15 has been written to address the §112 objections raised by the Examiner in the Office Action. Thus, independent claim 15 is believed to be definite, as required by §112.

In the Office Action, the Examiner has issued two provisional, obviousness-type double patenting rejections based upon pending Application No. 10/605,611 and Application No. 10/645,380. Since the issuance of the Office Action, Application No. 10/605,611 has issued as U.S. Patent No. 7,077,923. Included with this response are Terminal Disclaimers addressing both issued U.S. Patent No. 7,077,923 and pending Application No. 10/645,380. The Terminal Disclaimers are believed to address the double patenting rejections made by the Examiner in the Office Action.

In the Office Action, claims 1-4, 6 and 9 were rejected under 35 USC §103(a) as being unpatentable over the combination of the Gaikema U.S. Patent No. 4,689,936 and the Challis U.S. Patent No. 5,672,406. Claim 5 was rejected based upon the Gaikema '936 reference in view of the Challis '406 reference in further view of Mueller U.S. Patent No. 4,404,241. Claim 5 was also rejected based upon the combination of the Gaikema '936, Challis '406 and Inoue '175 references.

By the present response, independent claim 1 has been cancelled and generally rewritten as new independent claim 15. New independent claim 15 incorporates the subject matter of original claims 1 and 2, as well as including additional language to clarify the subject matter being claimed by the present application.

As required by new independent claim 15, the reusable composite film includes the plurality of micro-gaps that deform and open upon pressure being applied to the bottom surface of the composite layer to permit air and vapor to permeate through the composite layer when pressure is exerted against the bottom surface of the composite layer. As required by claim 15, when the pressure against the bottom surface decreases, the plurality of micro-gaps return to the normally closed condition of the static state to again prevent air permeation through the composite film such that the composite film can be reused to regulate another increase of pressure.

In addition, claim 15 requires the composite film to include a sealing layer that is applied to at least a portion of the top face surface of the composite layer that includes the plurality of micro-gaps. As required by claim 15, the sealing layer seals to the top surface of the composite layer to hold the plurality of micro-gaps in the normally closed condition to prevent air and water permeation through the micro-gaps. When the temperature applied to the bottom surface of the composite layer rises, the sealing properties of the sealing layer degrade, allowing the sealing layer to separate from the composite layer without fracturing, which allows the initially closed lower seam portion of the micro-gaps to become split and the split upper seam portion to expand to facilitate pressure regulation.

As required by claim 15, when the temperature applied to the bottom surface of the composite layer decreases, the sealing layer re-seals to the composite layer and the plurality of micro-gaps return to the normally closed condition of the static state to prevent air permeation through the polymer film. Since the sealing layer separates from the composite layer without fracturing, the sealing layer can re-seal to the composite layer to hold the plurality of micro-gaps in the normally closed condition over multiple pressure regulations.

In rejecting original claim 1, the Examiner cited the Gaikema '936 patent. The Gaikema reference teaches a plastic cover 3 having a vent hole 5 covered by a hot melt 7. During heat treatment, the hot melt 7 becomes liquid so that gases can escape from the

container having the plastic cover 3. The teaching of the '936 patent exemplifies a one-shot function, since once a buildup of pressure has been vented through the hot melt 7, the hot melt will permanently include a vent opening such that the plastic cover 3 cannot be used to vent another buildup of pressure, as required by amended independent claim 15.

In rejecting claim 1, the Examiner also relied upon the Challis '406 reference to show a sheet material having a thermally expandable passage. Although the Challis '406 reference teaches different shaped passages 4 formed in the composite structure 1, 3, the passage 4 is incapable of preventing water and air permeation in the static state, as required by claim 15. As evidence of the inability of the passages 4 taught by the Challis '406 patent to prevent water and air permeation, the embodiments shown in Figs. 5 and 6 teach that either a strip of paper 6 and/or a continuous microporous film 9 are applied over the passage 4 to prevent the ingress of dirt and microorganisms. As discussed in the specification of the '406 patent, during an increase in temperature, the size of the passage 4 will increase to increase the gas permeability. However, the Challis '406 reference clearly does not teach a structure that prevents air and gas permeation in the static state, as is required by amended independent claim 15.

Clearly, if the teachings of Challis and Gaikema '936 patents were combined, the combined structure would result in a one-shot hot melt structure of the Gaikema reference positioned over the passage taught in the Challis reference. However, such a teaching would not teach or suggest, nor render obvious, the use of a plurality of micro-gaps that, in their normally closed position, prevent water and air permeation. Further, the combination of the references do not teach or suggest the use of a sealing layer that maintains the micro-gaps in their normally closed condition and separates from the composite layer upon application of heat to allow the micro-gaps to open. Further, the combination of references does not teach a reusable structure that allows the composite film to be used over multiple pressure regulation applications.

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Based upon these arguments for allowance, as well as the amendments made to claim 15, independent claim 15 is believed to be allowable over the combination of references cited by the Examiner.

Claims 3-9 depend directly or indirectly from claim 15 and are thus believed to be allowable based upon the above arguments, as well as in view of the subject matter of each claim.

In rejecting the subject matter of claim 5, the Examiner relied upon the Mueller U.S. Patent No. 4,404,241 in combination of the references discussed above. In the Examiner's opinion, the Mueller invention related to a microwave package that included venting holes that are sealed with an extrudable hot melt material that is adapted to soften and permit venting of vapor generated in the package.

The Mueller '241 reference cited by the Examiner teaches a web of multi-layered sheet material that includes apertures 24 sealed by a hot melt extrusion 28 that passes through and fills each aperture during manufacture. The apertures 22 taught by the Mueller '241 reference are of substantial size, such as suggested at Col. 5, lines 5-10, such as a single aperture have a one-inch diameter, or four apertures having half-inch diameters each. According to the Mueller '241 reference, during heating and/or pressure within the container, the hot melt material softens and flows to permit the release of steam without distortion of the packaging. There is no suggestion in the Mueller '241 reference, nor could it be said to be consistent with the disclosure therein, that the apertures reseal following the removal of heat. Accordingly, the Mueller '241 reference fails to disclose or suggest a composite layer that includes micro-gaps that are normally closed. Furthermore, the Mueller '241 reference does not disclose a structure having a sealing layer formed such that, upon cooling, the sealing capability of the sealing layer is restored such that the micro-gaps in the base layer are resealed. The sheet material taught by the Mueller '241 reference therefore fails to realize at least the advantage of reusability that is provided by the independent claim 15.

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Finally, the Examiner has also relied upon the Inoue 4,769,175 reference in combination with the Gaikema and Challis references to teach a sheet-like oxygen scavenger for preserving food. However, the Inoue '175 reference clearly does not teach the features required by independent claim 15. For this reason, independent claim 15 is believed to be allowable over all of the references cited by the Examiner, either alone or in combination.

The Examining Attorney is invited to contact the applicant's undersigned attorney with any questions or comments, or to otherwise facilitate prosecution of the present application.

Respectfully submitted,

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